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PAVING THE WAY FOR PRICE-BASED ACQUISITION

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One of the leading visions of the Defense Reform Initiative is "igniting a revolution in business affairs within the Department of Defense (DoD) that will bring to the Department management techniques and business practices that have restored American corporations to leadership in the marketplace" (Cohen, February 1998). The current study of price-based acquisition (PBA), first recommended by Secretary of Defense William Cohen in his Section 912 report (April 1998), is an important step in this direction, and is important to another DoD goal: civil-military integration. Acquisition reform initiatives over the past several years have already paved the way for changing to PBA. Waivers of cost and pricing data and other price analysis methods have demonstrated that DoD can rely on these approaches to obtain best value for the war-fighter as well as the taxpayer. PBA can be a logical extension to these trends and build on our successes to date in reducing acquisition cost and cycle time.

For several decades, the DoD has relied increasingly on cost-based proposals for its contracting process. This emphasis on cost-based information has led to the imposition of unique accounting systems, extensive auditing, growing cycle times, and a loss of focus on best value. As noted by the Defense Science Board (1993):

The pace of change and proliferation of technology is increasingly driven by commercial markets. Commercial industry is increas-

ingly the dominant factor in several modern technologies and products that are militarily important. The focus and intensity of investment in new industrial techniques in manufacturing, process development, and product design in most commercial industries is far ahead of dedicated defense system producers.

DoD has grown increasingly concerned that its unique contracting requirements prevented it from tapping these commercial

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sources. The Section 912 report (Cohen, April 1998) pointed the way to a new approach:

In the past, the Department [of Defense], because of the nature of the marketplace and the fact that in many cases the goods and services the Department purchased were unique, found it necessary to purchase the goods and services it acquired using cost-based contracts built on the actual or projected cost of an item or service. Both the nature of the department's requirements and the way in which prices can be determined have changed. Now, DoD is promoting the use of performance-based requirements that talk of needs in terms of capability required. In many cases this will permit the department's needs to be satisfied with commercial products. Where commercial products aren't available, DoD's needs can often be satisfied though the use of commercial practices and/or commercial facilities in the provision of services or the production of goods (e.g., producing defense-unique items on commercial production lines using flexible tooling).

Over the past year, DoD has undertaken one of the most important initiatives of the "revolution in business affairs"—the study of price-based acquisition.

The Section 800 Commission report (1993) identified a reliance on cost-based accounting as one of its primary concerns.

Likewise, the Coopers & Lybrand/TASC study (1994) identified the cost accounting standards (CAS), material management accounting system (MMAS), and the Truth in Negotiations Act (TINA) as three of the top 10 areas where the DoD paid a premium over comparable civil systems. With regard to TINA, the report stated:

To comply with these requirements, contractors must establish and maintain an elaborate system for estimating, segregating, and tracking costs. The TINA requirement to provide certified cost and pricing data, and especially the large amount of auditing and other government oversight associated with this requirement, is a unique feature of the defense market. All of the contractors visited by the project team acknowledge that there will always be a need in many cases for some cost-based mechanism to validate prices in the defense market. There was also wide agreement that DoD should reduce its requirements for detailed cost data by easing restrictions on the use of price analysis and taking greater advantage of historical price information.

The Federal Acquisition Streamlining Act (FASA) of 1994 and the Clinger-Cohen Act of 1996 began to lay the foundation for change. The Federal Acquisition Regulation (FAR) Part 12 is an example, permitting the U.S. government to buy commercial items as any other buyer of goods and services. The rewrite of FAR Part 15 (199?) introduced still

further improvements, such as clearly making the request for certified cost and pricing data last in priority for contracting officers, after all other price-based methods were deemed inappropriate.

The follow-up study done by Coopers & Lybrand (1997) on the awareness and state of implementation confirmed that some progress was being made with TINA as one of the top 10 premium cost drivers, but there was no progress in the areas of CAS and MMAS. The report concluded by saying "continued commitment to training is vital. Special emphasis is needed in market research/exemptions to certified cost and pricing data, parametric estimating, commercial product definition and pricing..." (Coopers & Lybrand, 1997).

There is very little that is truly new here—for the concept of resorting to cost and pricing data last was always embraced in concept by the FAR. In practice, however, contracting officers were wary of failing to ask for extensive cost and pricing data either in competitions or in sole-source procurements, even if extensive prior price history was available. Their judgment could be called into question by any of the numerous oversight functions if they failed to demonstrate their rationale for arriving at a "fair and reasonable" price. Furthermore, competition is not always feasible nor is it completely accepted as the only best business practice—long-term partnering is also viewed as a way customers and suppliers can work together effectively for mutual benefit.

In response to Congressional desire to reduce the size of the defense acquisition workforce, the Defense Science Board recommended further steps to enhance price-based acquisition (1998): "Increase

the use of price-based forms of contracting. Several contract vehicles exist that do not carry the onerous overhead burden of cost-based contracts, and their use must become the rule rather than the exception. The greatest management challenges that must be overcome are to develop feasible price-based contracting options that are both performance-based and competitive, and to educate the acquisition workforce in these alternatives to cost-based contracts."

"Special emphasis is needed in market research/exemptions to certified cost and pricing data, parametric estimating, commercial product definition and pricing..."

As DoD's second largest contractor and also the largest commercial aerospace company in the world, the Boeing Company has long advocated using best commercial practices in government contracting. It has been a participant in both Coopers & Lybrand studies and has worked with DoD to demonstrate how price-based acquisition can become the norm. And the Boeing Company is completely committed to the principles of civil-military integration.

THE FIRST PARADIGM SHIFT

The first paradigm change that began to lead DoD contracting officers and their contractors away from the cost-based proposal paradigm was, oddly enough, a process to apply the principles of integrated product teams (IPTs) to the creation and negotiation of cost proposals. It is most often used in sole-source

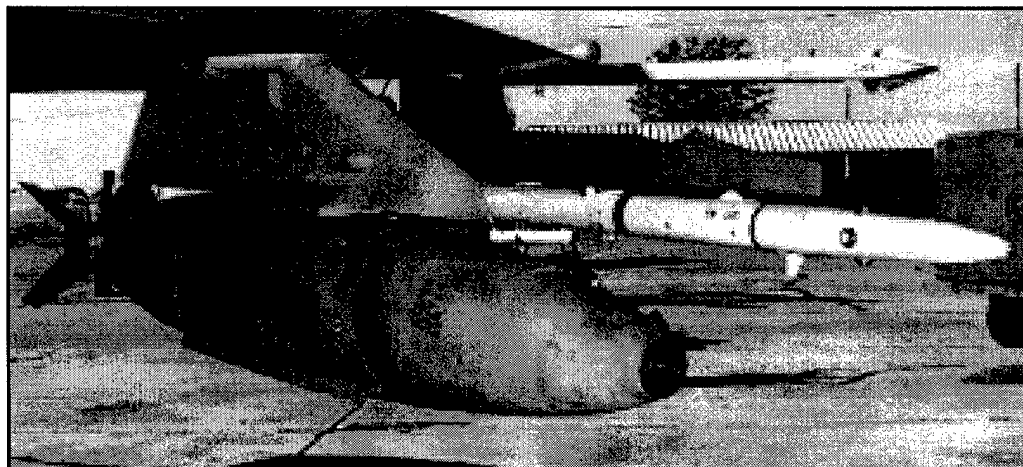


**The most successful of the FASA-authorized pilot programs—
the joint direct attack munition (JDAM).**

procurements, but has been applied even in competitive situations such as “rolling down-selects” pioneered by the most successful of the FASA-authorized pilot programs—the joint direct attack munition (JDAM). This new teaming process has been called “alpha contracting,” “IPT pricing,” or “one-pass contracting.”

Whatever its name, it brings all the parties together as the requirements are defined and the cost proposal developed. This can be approached as a single

multidisciplined team or operate within the program’s existing IPT structure. The team from the program office is headed by the contracting officer, and is joined by the local Defense Contract Management Command (DCMC) and Defense Contract Audit Agency (DCAA) personnel. They work together with the contractor’s technical, contracts, and cost estimating staff to develop the estimate. Very often this leads to clearer definition of requirements, if not actual changes, as



cost drivers are understood. This is a simple but effective form of cost as an independent variable (CAIV).

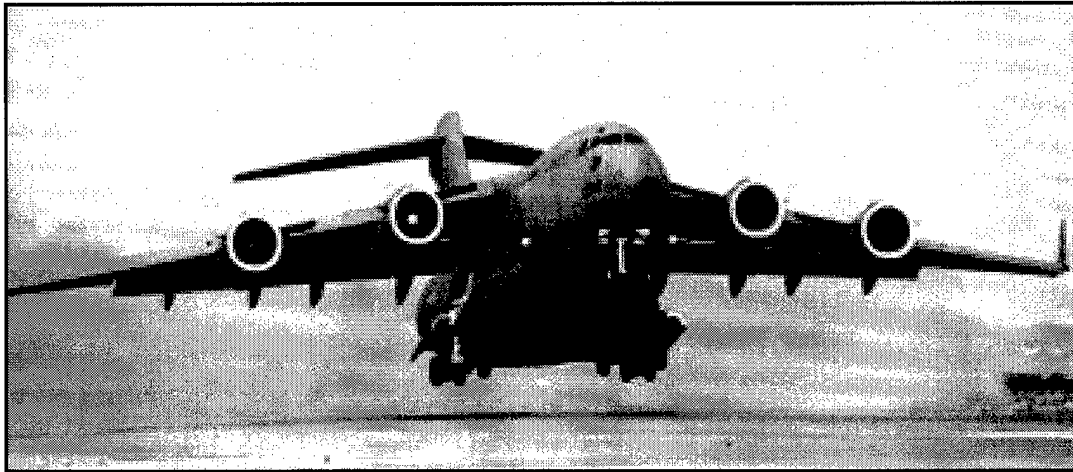
Rather than "throwing the proposal over the wall" to the government program office for evaluation, this team approach traces requirements to schedule and costs, identifies the appropriate bases for estimates, and agrees on historical data most appropriate to use and supporting rationale. Thus, proposal preparation and fact-finding are combined into a seamless process, with a significant reduction in cycle time and greater confidence in the resulting contract scope and estimated value.

Our experience across a wide spectrum of customers with all the DoD Services has taught us that there is a learning curve to this process. The first experience requires patience, team building, and adherence to an agreed schedule. Travel costs and meeting time will appear excessive at first. More advanced IPTs have actually included review of key suppliers' proposals and supporting information. DCAA can and should participate, but rightfully needs to maintain its ability to review the results objectively, while contributing with advice throughout the process.

The results are dramatic. Acquisition cycle time is reduced. New relationships are established based on trust and respect. The underlying data is better understood. Negotiations are likely to be measured in minutes or hours rather than days or weeks, with less disagreement over fundamental issues since requirements and the scope have been shaped to be affordable.

Out of this process can come new tools that advance acquisition methods still further, such as:

- Advance agreements on cost estimating relationships (CERs), one of the first steps toward using parametric estimating to replace "bottoms up" estimating.
- Establishment of long-term indefinite delivery-indefinite quality (IDIQ) or other such contracts for a variety of items for customer product support. This is the beginning of a "catalog" approach tailored to military procurement.
- Development of cost models that have the agreement of all the parties and can be used to simulate, if not actually fully price, follow-on contracts. One of the leading examples of this is the C-17 *Globemaster III* program where an extensive cost model was used to establish the basis for the "should-cost" and subsequent multiyear contract. This model has buy-in from all the parties and continues to be used today.
- Sharing and exchange of data electronically—the onset of "paperless contracting"—to reduce travel and meeting time for all the participants. The most recent example of this has been on the fiscal year 1999 production contract for the Standoff Land Attack Missile Expanded Response (SLAM ER) program. Both the program office's requirements and contract documentation as well as the contractor's cost and supporting information are located on a shared server to allow secure access by all parties. This is viewed as the beginning of administering the contract throughout its performance and to closeout in electronic form.



The C-17 Globemaster III

THE SECOND PARADIGM SHIFT

Within the past few years, the heads of contracting activities (HCAs) (U.S. Code, YEAR) have been granted authority to waive cost and pricing data if it was clear that other price-based analyses could be used, such as reliance on adequate price history. These same HCAs have been

under increasing pressure to reduce acquisition staffs and cycle time. Support groups such as the DCMC and the DCAA have likewise been under pressure to reduce staff, potentially increasing the burden on them and resulting in delays for contracting officers when assist audits for cost proposals are requested.



The JDAM final proposal was only in the tens of pages rather than the thousands on other similar programs in the past—even though the contract for the second phase of engineering and manufacturing development (E&MD) was to be cost reimbursable. It also contained fixed-price options for the first two low-rate production lots and price commitments for the following three full-rate production lots. This was made possible due both to competition and to having the customer engaged in the contractor's design to cost efforts throughout the first E&MD phase.

However, sole-source contracts are still the contract actions that commit the largest share of DoD procurement funding each year. Due to the confidence gained through the use of alpha contracting experiences described above as well as extensive price history, contracting officers began to request waivers of certified cost and pricing data on major sole-source programs from HCAs within the past three years.

One of the first experiences at the Boeing company was on a production fighter and attack aircraft program with a 15-year history. The production lot included quantities for both the Service and a foreign military sale. The program office challenged the company to meet a price objective—with the promise to obtain a waiver of cost and pricing data if we did. We provided our price offer and some supporting data (involving larger subcontractors) within 30 days. The Service agreed with the price and obtained the waiver for this billion-dollar procurement (U.S. Navy memorandum, 1996). The contracting officer for this contract said that "procurement administrative lead time was reduced by six to eight months

through waiver of cost/pricing data while securing a favorable price" (Rosendorf, 1996). Shortly thereafter, this success was repeated on another fiscal year annual production buy of more than \$100 million by another Service for a foreign military sale of rotor craft (U.S. Army memorandum, 1996).

In both instances, price agreement preceded granting of the waiver by the HCA. However, with another Service for a more complicated purchase (one year of production aircraft and two option years), the waiver was obtained in advance of price submittal and negotiation (U.S. Air Force memorandum, 1996). In all these instances, the Boeing Company as the prime contractor requested waiver not only for ourselves, but also for our subcontractors, and usually these were granted. However, in many cases we

had already begun the process of obtaining supplier quotes with cost and pricing data due to the lead times to support our cost proposal. This demonstrates one of the lessons learned in the waiver process—for maximum savings, flowing down to suppliers, the waiver should be granted well in advance of normal proposal submission.

After several more of these waivers were granted on large production programs, the resident DCAA auditor prepared an article for an in-house newsletter in which he listed the benefits of such waivers (Bailey, 1996):

"However, sole-source contracts are still the contract actions that commit the largest share of DoD procurement funding each year."

- Cycle times for definitization of contracts that previously had taken between 6 and 24 months could be reduced to a 30- to 60-day period.
- Favorable pricing could be obtained in consideration for eliminating the government's right to seek adjustments due to inaccurate disclosure.
- The contractor must accept more risk because of less actual cost incurred before the contract is awarded.
- Data submissions are more manageable.
- Funds can be committed more quickly and when available.
- The waivers eliminate the need for long lead contracts.
- There is less oversight for all parties.

Progress has continued as our customers have increased their confidence in this tool for acquisition streamlining. A waiver of cost and pricing data was given for the recurring production rotor craft portion of a multiyear prime contract totaling about a billion dollars. The initial price proposal was only about 10 pages, although some additional information was supplied in several meetings to support the contracting officer's determination of a "fair and reasonable" price. Certified cost and pricing data was still required for some of the major subcontractors. The entire process, from request for proposal through definitization, took only six months.

In one particularly innovative approach, a tactical missile program that had long been in production, developed a series of

price curves reflecting various quantities and configurations to be ordered during the fiscal year. This was commonplace on this program, due to foreign military sale orders, but had never before been settled on a price basis, which greatly simplified the process. A request for proposal was originally issued anticipating full cost and pricing data, but within the next 90 days, discussions commenced on using a price-based methodology. After an exchange of information over a period of slightly more than two months, negotiations were concluded in a week-long meeting. The program was then granted a waiver of cost and pricing data.

As with alpha contracting, there is a learning process associated with this methodology also. All parties must have confidence that dealings are on a fair and equitable basis. Price history must be well established, although we have found that quantities can rise or fall and adjustments still be made without resorting to cost data. The low level of inflation throughout this process has undoubtedly helped, but this need not be prohibitive since economic price adjustment or adjustment of abnormal inflation in economy clauses have often been used in both military and commercial aircraft procurements.

The savings in cost and cycle time for these waivers are significant. During a three- to four-year period, one of Boeing's major sites with several large production programs and its customers were able to realize a reduction of 50 percent in proposal and contract cycle time. As an example, one annual production buy of 12 aircraft well in excess of \$100 million was accomplished in just over two months with a fully definitized contract in place on the first day of the fiscal year.

THE CHANGES CONTINUE

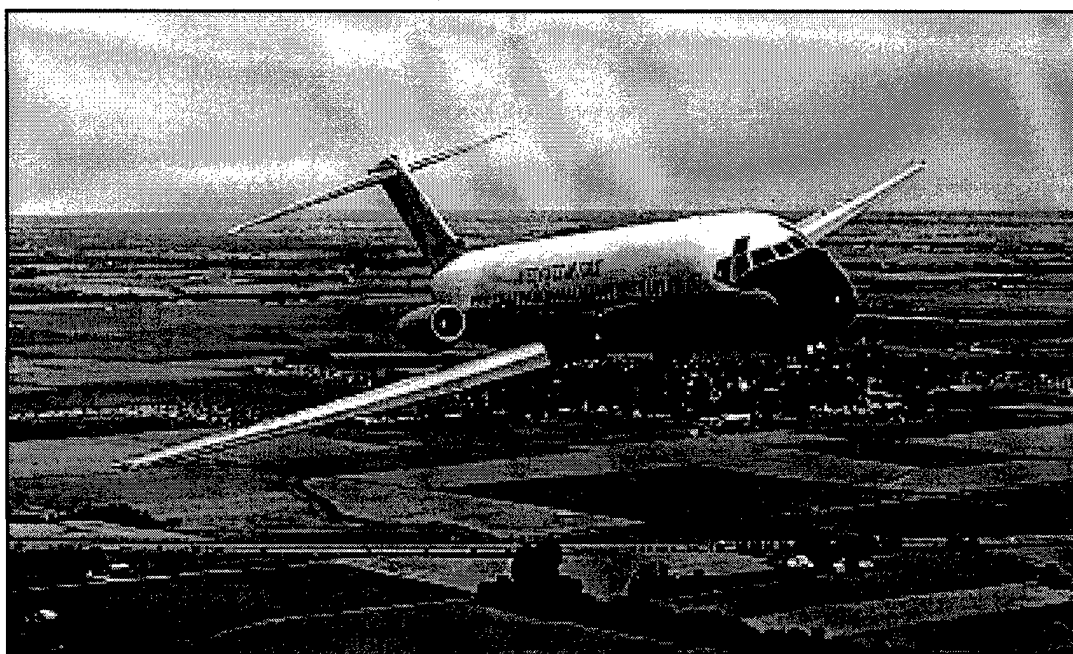
FAR Part 12 is the new instrument to enable the DoD to procure commercial items more easily than before, using contracting terms and conditions customary to that business area. It "prescribes policies and procedures unique to the acquisition of commercial items. It implements the federal government's preference for the acquisition of commercial items contained in Title VIII of the Federal Acquisition Streamlining Act of 1994 by establishing acquisition policies more closely resembling those of the commercial marketplace and encouraging the acquisition of commercial items and components." It also provides a comprehensive definition of the term "commercial" which broadens its use to a variety of products and services.

It is not unusual for DoD to procure commercial transport aircraft for a variety of military missions. As Billy Mitchell

once noted (1921): "In the development of national aeronautics, commercial aviation is almost as great an asset as if it were regularly incorporated into fighting units."

Examples of this ongoing civil-military integration abound during and since World War II. They include:

- C-47 and RAF *Dakota*;
- C-135 and KC-135 cargo/tanker;
- E-3A and E-4A AWACS and national command post;
- T-43A navigational trainer;
- KC-10 Air Force tanker;
- C-9 for Navy and Air Force; and
- C-32 and C-40.



C-9



T-43A Navigational Trainer

The C-32 for the U.S. Air Force and the C-40 for the U.S. Navy are some of the most recent examples of DoD procurements today under FAR Part 12. In both cases, commercial pricing was obtained, including for many of the modifications deemed to be of a type customary for the marketplace or minor modifications for unique defense needs. One of these, the C-32, received the Hammer Award for Reinventing Government from Vice President Al Gore.

In still another arena, contractors and their DoD customers have been exploring various approaches to streamlining the spares acquisition process. One attractive alternative is to establish a catalog for DoD ordering, which can be accessed electronically. It can supply price as well as schedule, lead time, and delivery information.

The Boeing Company has given all DoD customers the opportunity to use the Boeing Partner Network to acquire spares for commercial aircraft. A similar catalog

ordering for military aircraft and rotor craft has been developed recently. In this case, the local administrative contracting officer negotiates prices, if necessary, and the Boeing Company agrees to hold these prices for a year, with an agreed quantity discount provision, in its catalog. In one case, we have a Service customer using IMPACT purchase cards to acquire such spares.

Although contract formation can be accomplished on a price basis, some have worried that the cost basis must be maintained for payments. Obviously, with the enactment of performance-based milestone payments, this need is eliminated. Boeing has performance-based milestone payments in place on two large multiyear procurement programs that are working very well. For commercial items, the U.S. government can elect to use payments customary to that business sector, including advance payments of up to 10 percent of the price.

CONCLUSIONS

The specifics of DoD's new price-based acquisition policies have not been published (as this article went to press). It is clear, however, that a pathway has been created that will allow contracting officers to embrace this change. Progress in alpha contracting, waivers of certified cost and pricing data, purchase of commercial items, and using catalogs for small purchases are demonstrating the value of PBA. The savings in acquisition cycle time and cost can be significant.

Whatever the PBA policies are, they should be added to the new acquisition "tool box" for contracting officers to be used as the situation demands. If we should have learned any one thing from acquisition reform, it is that there is no single best solution—for judging past performance, for using performance or detail specifications, for any single product sustainment approach, or for contracting. Contracting demands the flexibility to balance risk, requirements, schedules, and costs for both parties. PBA will provide still another tool set that can help contracting officers acquire commercially available technology and also help bridge the civil-military integration gap.

It is hoped that PBA does build on these experiences, and that:

- It will be used to encourage teamwork in developing the contract, specifications, statements of objectives or work, use of CAIV, application of parametric estimating methods, and cost modeling by all the parties involved in the acquisition process.
- Use will be made of commercial item exemptions, expanded to include commercial sites. If the vast majority of the work at a site is commercial, then CAS should not be imposed for a small amount of military work. This would negate the imposition of TINA for certified cost and pricing data. Instead, contracting officers will rely on freely supplied information regarding cost drivers from accounting systems that comply with generally accepted accounting principles to support CAIV tradeoffs and to determine "price reasonableness."
- Greater use should be made of waivers of cost and pricing data. We have already proven that other price analysis tools can suffice, such as market analysis, cost models and parametric estimating techniques, or adequate price history. A truly dramatic paradigm shift, similar to that undertaken by then-Secretary of Defense William Perry for military specifications and standards (1994), would be to require a waiver for a contracting officer to request certified cost and pricing data. This would ensure that contracting officers had exhausted all alternatives to PBA before resorting to cost-based approaches.
- It should encourage use of these tools at all levels of the supply chain. Often DoD's policies fail to penetrate through the layers of the supply chain from the prime contractors. These suppliers can easily represent more than half the cost of any system. To some degree, this is the responsibility of the prime contractor but DoD must also encourage the

whole supply chain. FAR Part 12 does this with a flow-down provision that permits use of commercial item exemptions anywhere in the supply chain. Similarly, DoD should consider policies that essentially grant HCA authority to primes at any level to waive supplier cost and pricing data. Such waivers must still meet the test of reasonableness that a contracting officer must meet. The prime should demonstrate that market pricing, cost modeling, or adequate price history are available and sufficient to arrive at a negotiation objective. DoD remains at the top of this "pyramid" and can ultimately render a judgment on the price or cost proposal presented for negotiation. Some of the greatest gains in cost and cycle time will accrue at these subcontract levels.

- It should encourage training, more training, and a tolerance for risk taking. We have seen great progress in

acquisition reform, but a common complaint is the lack of training in these new concepts and tools. This has been noted in revolution in business affairs goals, and progress has already been made. For example, Stan Soloway's DoD acquisition reform office has held a number of excellent nationwide video broadcasts. But many of the tools discussed in this paper are still the exceptions and are not commonplace, which demonstrates the need to continue training. It also demonstrates the need for top-level management support of these tools. DoD awards should be given to those teams that best support their war-fighter customers and DoD's policies by reducing acquisition cost and lead times. PBA will require still further training to be successful. There is an advantage, we have learned, to conducting training of industry and government at the same time, as both need to shed their old cultural roots and step out on this pathway to the future.



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